IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of	Confirmation No.: 9223
Thomas J. Ribarich.	Date: May 29, 2007
Serial No.: 10/678,004	Group Art Unit: 2875
Filed: October 2, 2003	Examiner: Hargobind S. Sawhney

For: COMPACT FLUORESCENT LAMP PACKAGE

VIA EFS-WEB
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R. §41.37

Sir:

This Brief is submitted in support of Applicants' appeal from the Examiner's final rejection of this application dated November 30, 2006.

I. REAL PARTY IN INTEREST

The real party in interest in the above-identified application is: International Rectifier Corporation, a corporation organized under the laws of the State of Delaware, the assignee of this application.

II. RELATED APPEALS AND INTERFERENCES

The applicants, the assignee, and the undersigned attorneys are not aware of any related appeals and interferences.

III. STATUS OF CLAIMS

Claims 1, 2, 4, 6-16 and 38-42 are pending and on appeal herein.

Claims 1, 6 and 38 have been amended.

Claims 3, 5 and 17-37 have been canceled.

IV. STATUS OF AMENDMENTS

All amendments have been entered. A Final Office Action was mailed on November 30, 2006. A Notice of Appeal was filed on February 26, 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Compact fluorescent lamp packages (hereinafter "CFLP") have been recently introduced into the market as an energy efficient alternative to standard incandescent light bulbs. A conventional CFLP, however, is taller than a conventional incandescent light bulb, which is about 4.5" tall. The additional height of CFLP is attributable to its auxiliary elements such as auxiliary housing. As a result, a conventional CFLP may not fit within an existing light fixture or may extend out of a lamp shade or a fixture adapted for an incandescent light bulb causing an undesirable appearance.

Further, a ballast of a conventional CFLP is housed in the auxiliary housing. The heat generated by the ballast cannot efficiently escape from the housing. Consequently, there is a higher ambient temperature around the CFLP that causes the internal components of the CFLP, especially the ballast, to run at even higher temperatures, often above 150°C. This high internal temperature decreases reliability of the CFLP, causes field failures and limits the use of conventional CFLPs to open, rather than enclosed, fixtures, all of which discourage the acceptance of CFLPs in the marketplace. Moreover, physical dimensions and the unusual appearance of conventional CFLPs are believed to adversely affect their desirability.

Broadly stated, the claimed invention is directed to a solution of the above problems. Independent claim 1, directed to an apparatus according to the invention, recites:

Claim Feature	Support in Specification
A compact fluorescent lamp package comprising:	Throughout pages 5-16
a screw base for electrically connecting said lamp package to an electrical socket which is capable of receiving a screw base of an ordinary incandescent lamp,	Fig. 3; element 10; page 5, paragraph [0036]
said screw base including an open end and a closed end and a wall surrounding said closed end to provide an enclosure around a space;	Fig. 5; elements 34, 36 and 38, respectively; page 8, paragraph [0047]
a multi-chip module including a complete ballast circuit formed on a circuit board contained inside said screw base and electrically connected to said screw base to receive power through said screw base,	Figs. 4 and 5; elements 16 and 18; page 6, paragraphs [0040]-[0041]; pages 8-9, paragraph [0048]
said circuit board including opposing surfaces, one surface facing said opening and the other surface facing said closed end;	Figs. 4 and 5; element 18; page 6, paragraph [0041]
a thermally conductive body disposed around said ballast circuit and supporting said multi-chip module within said screw base, and thermally connecting said wall of said screw base to said ballast circuit directly, whereby said screw base may dissipate heat generated by said ballast circuit; and	Fig. 5; element 40; page 8, paragraph [0047]
a fluorescent lamp extending away from said screw base and operatively connected to said ballast circuit;	Figs. 3, 5 and 6; element 12; page 7, paragraph [0043]
wherein said multi-chip module is formed on a single circuit board.	Figs. 4 and 5; elements 16 and 18; page 6, paragraph [0041]

Independent claim 38, directed to an apparatus according to the invention, recites:

Claim Feature	Support in Specification
A compact fluorescent lamp comprising:	Throughout pages 5-16
a screw base configured to be received in an electrical socket, said screw base having a bottom portion and an annular wall extending from said bottom portion and disposed around a space, said screw base being configured for external electrical connection;	Figs. 3 and 5; elements 10, 36 and 38; page 5, paragraph [0036]; page 8, paragraphs [0047]-[0048]
a circuit board disposed in said space and having two opposing surfaces one of said surfaces facing said bottom portion;	Figs. 4 and 5; element 18; page 6, paragraph [0041]
an electronic ballast circuit including a plurality of electronic components, said components being disposed on both surfaces of said circuit board, said electronic ballast being electrically connected to said screw base to receive power;	Figs. 4 and 5; elements 16 and 18; page 6, paragraphs [0040]-[0041]; pages 8-9, paragraph [0048]
a thermally conductive body disposed within and supporting said circuit board inside said screw base and in direct thermal contact with said electronic ballast circuit and said annular wall of said base thereby thermally connecting said ballast circuit and said screw base;	Fig. 5; element 40; page 8, paragraph [0047]
a fluorescent lamp operatively connected to said electronic ballast; and	Figs. 5 and 6; element 12; page 7, paragraph [0043]
a diffuser cover directly attached to said screw base and surrounding said fluorescent lamp without an intermediate compartment disposed therebetween;	Fig. 1; element 14; page 6, paragraph [0039]; page 15, paragraph [0065]
wherein said multi-chip module is formed on a single circuit board.	Figs. 4 and 5; elements 16 and 18; page 6, paragraph [0041]

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1, 2, 4, 6-16 and 38-42 were properly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,548,948B1 to Muessli (hereinafter "Muessli") in view of PCT Publication No. WO 96/13048 to Mies et al. (hereinafter "Mies").

VII. ARGUMENT

1. Rejection of claims 1, 2, 4, 6-16 and 38-42 under 35 U.S.C. 103(a)

Claim 1 is directed to a compact fluorescent lamp package, and recites the following features:

> a screw base for electrically connecting said lamp package to an electrical socket which is capable of receiving a screw base of an ordinary incandescent lamp, said screw base including an open end and a closed end and a wall surrounding said closed end to provide an enclosure around a space;
>
> a multi-chip module including a complete ballast circuit formed on a circuit board contained inside said screw base and electrically connected to said screw base to receive power through said screw base, said circuit board including opposing surfaces, one surface facing said opening and the other surface facing said closed end;
>
> a thermally conductive body disposed around said ballast circuit and supporting said multi-clip module within said screw base, and thermally connecting said wall of said screw base to said ballast circuit directly, whereby said screw base may dissipate heat generated by said ballast circuit; and
>
> a fluorescent lamp extending away from said screw base and operatively connected to said ballast circuit;
>
> wherein said multi-chip module is formed on a single circuit board.

Claim 38 is directed to a compact fluorescent lamp and recites the following features:

> a screw base configured to be received in an electrical socket, said screw base having a bottom portion and an annular wall extending from said bottom portion and disposed around a space, said screw base being configured for external electrical connection;
>
> a circuit board disposed in said space and having two opposing surfaces one of said surfaces facing said bottom portion;
>
> an electronic ballast circuit including a plurality of electronic components, said components being disposed on both surfaces of said circuit board, said electronic ballast being electrically connected to said screw base to receive power;
>
> a thermally conductive body disposed within and supporting said circuit board inside said screw base and in direct thermal contact with said electronic ballast circuit and said annular wall of said base thereby thermally connecting said ballast circuit and said screw base;
>
> a fluorescent lamp operatively connected to said electronic ballast; and
>
> a diffuser cover directly attached to said screw base and surrounding said fluorescent lamp without an intermediate compartment disposed therebetween;
>
> wherein said multi-chip module is formed on a single circuit board.

As may be seen, both claims emphasize the feature that the circuit board includes two opposing component receiving surfaces and is arranged such that the component receiving surfaces are facing the opening and the bottom of the screw base. As a result of such an arrangement, physically smaller components can be received on one surface of the circuit board, while physically larger components are received on the other surface of the circuit. Thus, as described in paragraph [0044] of the specification, nearly all of the depth of the screw base can be made available to accommodate the components of the CFLP without a need to vary the component receiving area of the circuit board and without a need for an auxiliary compartment.

Muessli and Mies both disclose a device in which the circuit board is vertically oriented such that its component receiving surfaces face the wall of the screw base. As a result of such an arrangement, the maximum area for receiving components can be obtained if the circuit board is aligned with the center vertical plane of the screw base. To attain maximum area for receiving components, however, the height of the components would be limited to one half of the diameter of the circular base of the screw base. To accommodate components having a higher height the circuit board must be spaced from the center plane, which would result in the reduction of the available area for receiving components.

Further, claims 1 and 38 both recite the feature that the multi-chip module is formed on a single circuit board. In contrast, Muessli discloses the following:

> The three coils of the oscillating circuit transformer are realized as printed coils (not illustrated) wherein one half of the coils is arrange, respectively, on the printed board 41, the other half, respectively, on the additional board 42. The additional board 42 is placed upside-down onto the printed board 41 so that the corresponding partial coils can be soldered to one another. In this way, the three coils can be produced much more quickly and in a more space-saving way in comparison to conventional ballasts in which three wire coils must be wound by hand onto the annular core and must be finally soldered to the printed board. Col. 5, lines 6-16.

Clearly, the arrangement in Muessli requires at least two circuit boards 41, 42 for a complete ballast.

In the Final Office Action, the Examiner does not argue the Applicant's point that Muessli does not teach a single circuit board but, instead, indicates that "the second circuit board 42" is "integral to the main circuit board." Final Office Action, page 7. However, Muessli does not disclose the two circuit boards being "integral," it merely discloses that the "additional board 42 is placed upside-down onto the printed board 41 so that the corresponding partial coils can be soldered to one another." Col. 5, lines 10-12. Moreover, claim language of claims 1 and 38 clearly requires a "single circuit board" not two integral boards. Therefore, this limitation of claims 1 and 38 is not disclosed or suggested by the cited prior art.

Finally, claims 1 and 38 recite the thermally conductive body to support the circuit board inside the screw base. Neither Mies, nor Muessli teaches or suggests using a thermally conductive body to both transmit heat to the screw base for dissipation and to support the ballast module inside the screw base. Muessli teaches supporting its circuit board 41 inside the screw base using inner lid 60. See col. 5, lines 20-29. Mies, on the other hand, only states that the "heat-conducting plate P is fastened in the space 7 by means not shown in Fig. 1". Page 3, line 29. There is no disclosure that body D can support heat conducting plate in that: a) it is not clear that body D can adhere to housing 6 and plate P well enough to support plate P in the manner shown in Fig. 1 (i.e. suspended inside space 7 above the bottom of the screw base); b) body D is a paste, which due to its relative compliability, would not be expected to resist sagging when attached to plate P as shown in Fig. 1. With respect to the latter, it should be noted that body D is made from Eccotherm TC-4, which is a liquid/paste. Thus, it would not be reasonable to expect that body D as disclosed by Mies would have the inherent capability to support plate P in the manner shown.

Therefore, elements of Applicant's claims 1 and 38 are missing from the teachings of Muessli and Mies, and, accordingly, cited prior art does not render Applicant's claims 1 and 38 unpatentable under 35 U.S.C. §103(a). Claims 2, 4, 6-16 and 39-42 depending directly or indirectly from claims 1 and 38, respectively, are patentable for the same reasons as claims 1 and 38 and further because of the combination of features in those claims with the features set forth in the claim(s) from which they depend.[1]

2. Rejection of claim 6 under 35 U.S.C. 103(a)

Claim 6 depends on claim 1 and recites the "compact fluorescent lamp package" where the "ballast circuit includes elements disposed on both sides of said circuit board." Support for this limitation of claim 6 may be found in paragraphs [0041]-[0044] of the specification.

Claim 6 has been rejected over Muessli in view of Mies et al. as well as on the grounds that Muessli allegedly teaches:

---

1. The rejections of claims 2, 4, 7-16 and 39-42 are not treated separately herein.

ballast circuit 40 including elements mounted on both sides of the circuit board 41 (Muessli, Column 2, lines 63-65, and Column 4, lines 38-41).

Muessli, however, only states that its circuit board 41 includes wiring on both sides. See, e.g. Col. 4, lines 41-42 ("The printed circuit board 41 is provided on both sides with conductors"). Muessli does not show or describe components of a ballast circuit on both sides of circuit board 41. Thus, the limitations of claim 6 are not disclosed in the cited prior art.

VIII. CONCLUSION

Claims 1 and 38, and their respective dependent claims should be deemed allowable over the art of record.

Credit card payment for the required filing fee in the amount of $500.00 (large entity) is submitted via EFS-WEB.

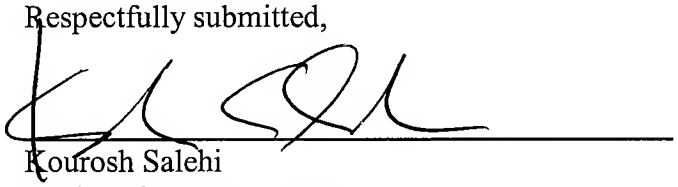
If this communication is filed after a shortened statutory time period has elapsed and no separate Petition is enclosed, the Commissioner of Patents and Trademarks is petitioned, under 37 C.F.R. §1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 C.F.R. §1.135. The fee under 37 C.F.R. §1.17 should be charged to our Deposit Account No. 15-0700.

In the event the actual fee is greater than the payment submitted or is inadvertently not enclosed or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge the underpayment to Deposit Account No. 15-0700.

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON May 29, 2007.

KS:AV:ck

Respectfully submitted,



Kourosh Salehi
Registration No.: 43,898
OSTROLENK, FABER, GERB & SOFFEN, LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Telephone: (212) 382-0700

CLAIMS APPENDIX

1. (Previously Presented) A compact fluorescent lamp package comprising:

a screw base for electrically connecting said lamp package to an electrical socket which is capable of receiving a screw base of an ordinary incandescent lamp, said screw base including an open end and a closed end and a wall surrounding said closed end to provide an enclosure around a space;

a multi-chip module including a complete ballast circuit formed on a circuit board contained inside said screw base and electrically connected to said screw base to receive power through said screw base, said circuit board including opposing surfaces, one surface facing said opening and the other surface facing said closed end;

a thermally conductive body disposed around said ballast circuit and supporting said multi-clip module within said screw base, and thermally connecting said wall of said screw base to said ballast circuit directly, whereby said screw base may dissipate heat generated by said ballast circuit; and

a fluorescent lamp extending away from said screw base and operatively connected to said ballast circuit; wherein said multi-chip module is formed on a single circuit board.

2. (Previously Presented) A compact fluorescent lamp package according to claim 1, further comprising a diffuser cover disposed around said fluorescent lamp and directly connected to said screw base to provide said lamp package with an appearance of an ordinary incandescent lamp.

Claim 3 (Canceled).

4. (Previously Presented) A compact fluorescent lamp package according to claim 1, wherein said screw base is an Edison screw base.

Claim 5 (Canceled).

6. (Previously Presented) A compact fluorescent lamp package according to claim 1, wherein said ballast circuit includes elements disposed on both sides of said circuit board.

7. (Previously Presented) A compact fluorescent lamp package according to claim 6, wherein said elements include design dependent electronic components and design independent electronic components, said design dependent electronic components being disposed on one side of said circuit board and said design independent electronic components being disposed on another opposing side of said circuit board.

8. (Previously Presented) A compact fluorescent lamp package according to claim 6, wherein said design dependent electronic components include a filter inductor, a resonant inductor, a capacitor, and said design independent electronic components include power switching devices.

9. (Previously Presented) A compact fluorescent lamp package according to claim 1, wherein said thermally conductive body is a thermal epoxy which is disposed in said space in said base for mechanical stability and thermal management.

10. (Original) A compact fluorescent lamp package according to claim 1, wherein said multi-chip module comprises a circuit board that has a perimeter that generally follows the contour of the wall of said base.

11. (Original) A compact fluorescent lamp package according to claim 1, wherein said multi-chip module is formed on a generally circular circuit board.

12. (Original) A compact fluorescent lamp package according to claim 1, wherein said multi-chip module is formed on a generally rectangular circuit board.

13. (Original) A compact fluorescent lamp package according to claim 1, wherein said wall of said base serves as a connector for connecting said lamp to one pole of a power line, and said

closed end of said base includes a connector insulated from said wall serving as a connector for connecting to another pole of said power line.

14. (Previously Presented) A compact fluorescent lamp package according to claim 1, wherein said multi-chip module is electrically connected to said wall of said screw base via a first electrical wire and electrically connected to a connector disposed on said end of said screw base via a second electrical wire.

15. (Original) A compact fluorescent lamp package according to claim 1, wherein said fluorescent lamp is connected to said multi-chip module via respective filament terminals.

16. (Previously Presented) A compact fluorescent lamp package according to claim 1, wherein said multi-chip module includes a circuit board having at least one heatsink disposed on one major surface thereof, said heatsink being thermally connected through said circuit board to a heat-generating electronic component.

Claims 17-37 (Canceled).

38. (Previously Presented) A compact fluorescent lamp comprising:

a screw base configured to be received in an electrical socket, said screw base having a bottom portion and an annular wall extending from said bottom portion and disposed around a space, said screw base being configured for external electrical connection;

a circuit board disposed in said space and having two opposing surfaces one of said surfaces facing said bottom portion;

an electronic ballast circuit including a plurality of electronic components, said components being disposed on both surfaces of said circuit board, said electronic ballast being electrically connected to said screw base to receive power;

a thermally conductive body disposed within and supporting said circuit board inside said screw base and in direct thermal contact with said electronic ballast circuit and said annular wall of said base thereby thermally connecting said ballast circuit and said screw base;

a fluorescent lamp operatively connected to said electronic ballast; and

a diffuser cover directly attached to said screw base and surrounding said fluorescent lamp without an intermediate compartment disposed therebetween; wherein said multi-chip module is formed on a single circuit board.

39. (Previously Presented) A compact fluorescent lamp according to claim 38, wherein said screw base is an Edison screw base.

40. (Previously Presented) A compact fluorescent lamp according to claim 38, wherein said diffuser cover is shaped like an ordinary incandescent light bulb.

41. (Previously Presented) A compact fluorescent lamp according to claim 38, wherein said electronic ballast circuit is disposed entirely within said screw base.

42. (Previously Presented) A compact fluorescent lamp according to claim 38, wherein said thermally conductive body comprises a thermal epoxy.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.